

## 1. TRANSMITTED DATA

## 1-1 CHANNEL MESSAGES [H]:Hex, [D]:Decimal

Status [H]	Second [H] [D]	Third [H]	Description
8n	kk (kk)	vv	Note Off vv=0~127
9n	kk (kk)	vv	Note On vv=1~127
Bn	00 (00)	mm	Program Bank Select(MSB) [NOTE1]
Bn	06 (06)	dd	Data Entry(MSB) [TABLE1]
Bn	20 (32)	bb	Program Bank Select(LSB) [NOTE1]
Bn	62 (98)	nl	NRPN LSB [TABLE1]
Bn	63 (99)	nm	NRPN MSB [TABLE1]
Cn	pp (pp)	--	Program Change [NOTE1]

n : MIDI Channel (0~15)

## 1-2 SYSTEM COMMON MESSAGES

Status [H]	Second [H]	Third [H]	Description
F2	pp	pp	Song Position Pointer *1
F3	ss	--	Song Select ss : Song No. = 0~15 *2

\*1 This message is transmitted when in Song mode and the "Clock" is set to "INT".

\*2 This message is transmitted when is Song mode.

## 1-3 SYSTEM REALTIME MESSAGES

Status[H]	Description
F8	Timing Clock *
FA	Start *
FB	Continue *
FC	Stop *
FE	Active Sensing

\* :This message is transmitted when the "Clock" is set to "INT".

## 1-4 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES

## (1) DEVICE INQUIRY REPLY

Byte[H]	Description
F0	Exclusive Status
7E	Non Realtime Message
0c	MIDI Channel ( Device ID )
06	Inquiry Message
02	Identity reply
42	KORG ID ( Manufacturers ID )
61	EM-1 ID ( Family ID (LSB))
00	( Family ID (MSB))
00	( Member ID (LSB))
00	( Member ID (MSB))
xx	( Minor Ver. (LSB))
xx	( Minor Ver. (MSB))
xx	( Major Ver. (LSB))
xx	( Major Ver. (MSB))
F7	End of Exclusive

This message is transmitted whenever a INQUIRY MESSAGE REQUEST is received.

## 1-5 SYSTEM EXCLUSIVE MESSAGES

Function ID [Hex]		R	E
40	CURRENT PATTERN DATA DUMP	○	
58	CURRENT SONG DATA DUMP	○	
4C	PATTERN DATA DUMP	○	
57	ALL SONG DATA DUMP	○	
51	GLOBAL DATA DUMP	○	
26	DATA FORMAT ERROR		○
23	DATA LOAD COMPLETED		○
24	DATA LOAD ERROR		○
21	WRITE COMPLETED		○
22	WRITE ERROR		○

Transmitted when

R : Request message is received

E : Exclusive message is received

## 2.RECOGNIZED RECEIVE DATA

## 2-1 CHANNEL MESSAGES

Status [Hex]	Second [H] [D]	Third [H]	Description
8n	kk (kk)	vv	Note Off vv=0~127
9n	kk (kk)	00	Note Off
9n	kk (kk)	vv	Note On vv=1~127
Bn	00 (00)	mm	Program Bank Select(MSB) [NOTE1]
Bn	06 (06)	dd	Data Entry(MSB) [TABLE1]
Bn	20 (32)	bb	Program Bank Select(LSB) [NOTE1]
Bn	62 (98)	nl	NRPN LSB [TABLE1]
Bn	63 (99)	nm	NRPN MSB [TABLE1]
Bn	79(121)	00	Reset All Controllers
Bn	7B(123)	00	All Note Off *
Cn	pp (pp)	--	Program Change [NOTE1]
En	bb (bb)	bb	Pitch Bender Change

n : MIDI Channel No.(0~15)

\* : This message force Note Off to Synth Part only.  
Do not work Drum part.

## 2-2 SYSTEM REALTIME MESSAGES

Status[H]	Description	
F8	Timing Clock	*
FA	Start	*
FB	Continue	*
FC	Stop	*
FE	Active Sensing	

\* :This message is recognized when the "Clock" is  
set to "EXT".

## 2-3 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

## (1) DEVICE INQUIRY MESSAGE REQUEST

Byte[H]	Description
F0	Exclusive Status
7E	Non Realtime Message
0c	MIDI Channel
06	Inquiry Message
01	Inquiry Request
F7	End of Exclusive

## (2) MASTER VOLUME

Byte[H]	Description
F0	Exclusive Status
7F	Realtime Message
0c	MIDI Channel ( Device ID )
04	Device Control ID
01	Master Volume ID
11	Volume Data (LSB)
mm	Volume Data (MSB)
F7	End of Exclusive

## 2-4 SYSTEM EXCLUSIVE MESSAGE

Function ID [Hex]	Function
10	CURRENT PATTERN DATA DUMP REQUEST
1C	PATTERN DATA DUMP REQUEST
0A	CURRENT SONG DATA DUMP REQUEST
0B	ALL SONG DATA DUMP REQUEST
0E	GLOBAL DATA DUMP REQUEST
11	PATTERN WRITE REQUEST
1A	SONG WRITE REQUEST
40	CURRENT PATTERN DATA DUMP
4C	PATTERN DATA DUMP
51	GLOBAL DATA DUMP
58	CURRENT SONG DATA DUMP
57	ALL SONG DATA DUMP

All messages received when Sequencer is not running.

## MIDI EXCLUSIVE FORMAT (R:Receive, T:Transmit)

## (1) CURRENT PATTERN DATA DUMP REQUEST

R

Byte	Description
F0,42,3c,61	EXCLUSIVE HEADER
0001 0000 (10)	CURRENT PATTERN DATA DUMP REQUEST 10H
1111 0111 (F7)	EOX

When this message is received, the CURRENT PATTERN DATA DUMP(Function:40h) message will be transmitted.

## (2) PATTERN DATA DUMP REQUEST

R

Byte	Description
F0,42,3c,61	EXCLUSIVE HEADER
0001 1100 (1C)	PATTERN DATA DUMP REQUEST 1CH
0000 00bb	BANK(0:A/1:B/2:C/3:D)
1111 0111 (F7)	EOX

Pattern BANK is 64patterns block.

0:A01~A64, 1:B01~B64, 2:C01~C64, 3:D01~D64

When this message is received, the PATTERN DATA DUMP(Function:4Ch) message will be transmitted.

## (3) CURRENT SONG DATA DUMP REQUEST

R

Byte	Description
F0,42,3c,61	EXCLUSIVE HEADER
0000 1010 (0A)	CURRENT SONG DATA DUMP REQUEST 0AH

1111 0111 (F7)	EOX	
+-----+		+-----+

When this message is received, the CURRENT SONG DATA DUMP (Function:58h) message will be transmitted.

(4) ALL SONG DATA DUMP REQUEST R

Byte	Description	
F0,42,3c,61	EXCLUSIVE HEADER	
0000 1011 (0B)	ALL SONG DATA DUMP REQUEST	0BH
1111 0111 (F7)	EOX	

When this message is received, the ALL SONG DATA DUMP(Function:57h) message will be transmitted.

(5) GLOBAL DATA DUMP REQUEST R

Byte	Description	
F0,42,3c,61	EXCLUSIVE HEADER	
0000 1111 (0E)	GLOBAL DATA DUMP REQUEST	0EH
1111 0111 (F7)	EOX	

When this message is received, the GLOBAL DATA DUMP(Function:51h) message will be transmitted.

(6) PATTERN WRITE REQUEST R

Byte	Description	
F0,42,3c,61	EXCLUSIVE HEADER	
0001 0001 (11)	PATTERN WRITE REQUEST	11H
0000 000b (0b)	Destination Program Number(0:A01~B64,1:C01~D64)	
0ppp pppp (pp)	Destination Program Number	
1111 0111 (F7)	EOX	

When this message is received, a WRITE COMPLETED(Function:21h) message or a WRITE ERROR(Function:22h) message will be transmitted.

(7) SONG WRITE REQUEST R

Byte	Description	
F0,42,3c,61	EXCLUSIVE HEADER	
0001 1010 (1A)	SONG WRITE REQUEST	1AH
0000 ssss (0s)	Destination Song No(0~15)	
1111 0111 (F7)	EOX	

When this message is received, a WRITE COMPLETED(Function:21h) message or a WRITE ERROR(Function:22h) message will be transmitted.

(8) CURRENT PATTERN DATA DUMP R/T

Byte	Description	
F0,42,3c,61	EXCLUSIVE HEADER	
0100 0000 (40)	CURRENT PATTERN DATA DUMP	40H
0ddd dddd (dd)	Data	[NOTE2][TABLE2]
:	:	
1111 0111 (F7)	EOX	

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted.

## (9) PATTERN DATA DUMP

T

Byte	Description
F0,42,3c,61	EXCLUSIVE HEADER
0100 1100 (4C)	PATTERN DATA DUMP 4CH
0000 00bb	BANK(0:A/1:B/2:C/3:D)
0ddd dddd (dd)	Data [NOTE2][TABLE2]
:	:
1111 0111 (F7)	EOX

Pattern BANK is 64patterns block.

0:A01~A64, 1:B01~B64, 2:C01~C64, 3:D01~D64

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted.

## (10) GLOBAL DATA DUMP

R/T

Byte	Description
F0,42,3c,61	EXCLUSIVE HEADER
0101 0001 (51)	GLOBAL DATA DUMP 51H
0ddd dddd (dd)	Data [NOTE2][TABLE17]
:	:
1111 0111 (F7)	EOX

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted.

## (11) CURRENT SONG DATA DUMP

R/T

Byte	Description
F0,42,3c,61	EXCLUSIVE HEADER
0101 1000 (58)	CURRENT SONG DATA DUMP 58H
0ddd dddd (dd)	Data [NOTE2][TABLE11]
:	:
1111 0111 (F7)	EOX

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted.

## (12) ALL SONG DATA DUMP

R/T

Byte	Description
F0,42,3c,61	EXCLUSIVE HEADER
0101 0111 (57)	ALL SONG DATA DUMP 57H
0ddd dddd (dd)	Data [NOTE2][TABLE12]
:	:
1111 0111 (F7)	EOX

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted.

## (13) DATA FORMAT ERROR

T

Byte	Description
F0,42,3c,61	EXCLUSIVE HEADER
0010 0110 (26)	DATA FORMAT ERROR 26H
1111 0111 (F7)	EOX

## (14) DATA LOAD COMPLETED

T

Byte	Description
------	-------------

F0,42,3c,61 0010 0011 (23) 1111 0111 (F7)	EXCLUSIVE HEADER DATA LOAD COMPLETED EOX	23H
-------------------------------------------------	------------------------------------------------	-----

## (15) DATA LOAD ERROR

T

Byte	Description	
F0,42,3c,61 0010 0100 (24) 1111 0111 (F7)	EXCLUSIVE HEADER DATA LOAD ERROR EOX	24H

## (16) WRITE COMPLETED

T

Byte	Description	
F0,42,3c,61 0010 0001 (21) 1111 0111 (F7)	EXCLUSIVE HEADER WRITE COMPLETED EOX	21H

## (17) WRITE ERROR

T

Byte	Description	
F0,42,3c,61 0010 0010 (22) 1111 0111 (F7)	EXCLUSIVE HEADER WRITE ERROR EOX	22H

NOTE1 : Pattern number

mm,bb,pp = 00,00,00~3F : A01~64  
 00,00,40~7F : B01~64  
 00,01,00~3F : C01~64  
 00,01,40~7F : D01~64

NOTE2:The dump data conversion

DATA ( 1set = 8bit x 7Byte )

b7 ~ b0	b7 ~ b0	b7 ~ b0	b7 ~ b0
+++++           +++++	+++++           +++++	+++++           +++++	+++++           +++++
7n+0	7n+1	7n+2 ~ 7n+5	7n+6

MIDI DATA ( 1set = 7bit x 8Byte )

b7b7b7b7b7b7b7	b6 ~ b0	b6 ~ b0	b6 ~ b0
0	0	0	0
7n+6,5,4,3,2,1,0	7n+0	7n+1 ~ 7n+5	7n+6

TABLE1 : NON REGISTERED PARAMETER NUMBER (NRPN)

MOTION SEQUENCE/SONG EVENT DESTINATION PARAMETER NUMBER

nm	nl	Parameter	dd (Data Entry(MSB) Value) (Decimal)	ds
[H]	[H]			[H]
06	00	Drum1 Pitch	0~127	00
06	01	Drum1 Level	0~127	01
06	02	Drum1 EG Time	0~127	02
06	03	Drum1 Pan	0~127	03
06	04	Drum1 Amp EG	0~1	04
06	05	Drum1 Roll	0~1	05
06	06	Drum1 Effect Send	0~1	06
06	07	Drum1 Motion Seq Type	0~2 : Off/Smooth/TrigHold	--
06	08	Drum2 Pitch	0~127	08
06	09	Drum2 Level	0~127	09
06	0A	Drum2 EG Time	0~127	0A

# KORG EM-1 MIDI IMPLEMENTATION

06	0B	Drum2 Pan	0~127	0B
06	0C	Drum2 Amp EG	0~1	0C
06	0D	Drum2 Roll	0~1	0D
06	0E	Drum2 Effect Send	0~1	0E
06	0F	Drum2 Motion Seq Type	0~2 : Off/Smooth/TrigHold	--
06	10	Drum3 Pitch	0~127	10
06	11	Drum3 Level	0~127	11
06	12	Drum3 EG Time	0~127	12
06	13	Drum3 Pan	0~127	13
06	14	Drum3 Amp EG	0~1	14
06	15	Drum3 Roll	0~1	15
06	16	Drum3 Effect Send	0~1	16
06	17	Drum3 Motion Seq Type	0~2 : Off/Smooth/TrigHold	--
06	18	Drum4 Pitch	0~127	18
06	19	Drum4 Level	0~127	19
06	1A	Drum4 EG Time	0~127	1A
06	1B	Drum4 Pan	0~127	1B
06	1C	Drum4 Amp EG	0~1	1C
06	1D	Drum4 Roll	0~1	1D
06	1E	Drum4 Effect Send	0~1	1E
06	1F	Drum4 Motion Seq Type	0~2 : Off/Smooth/TrigHold	--
06	20	Drum5A Pitch	0~127	20
06	21	Drum5A Level	0~127	21
06	22	Drum5A EG Time	0~127	22
06	23	Drum5A Pan	0~127	23
06	24	Drum5A Amp EG	0~1	24
06	25	Drum5A Roll	0~1	25
06	26	Drum5A Effect Send	0~1	26
06	27	Drum5A Motion Seq Type	0~2 : Off/Smooth/TrigHold	--
06	28	Drum5B Pitch	0~127	28
06	29	Drum5B Level	0~127	29
06	2A	Drum5B EG Time	0~127	2A
06	2B	Drum5B Pan	0~127	2B
06	2C	Drum5B Amp EG	0~1	2C
06	2D	Drum5B Roll	0~1	2D
06	2E	Drum5B Effect Send	0~1	2E
06	2F	Drum5B Motion Seq Type	0~2 : Off/Smooth/TrigHold	--
06	30	Drum6A Pitch	0~127	30
06	31	Drum6A Level	0~127	31
06	32	Drum6A EG Time	0~127	32
06	33	Drum6A Pan	0~127	33
06	34	Drum6A Amp EG	0~1	34
06	35	Drum6A Roll	0~1	35
06	36	Drum6A Effect Send	0~1	36
06	37	Drum6A Motion Seq Type	0~2 : Off/Smooth/TrigHold	--
06	38	Drum6B Pitch	0~127	38
06	39	Drum6B Level	0~127	39
06	3A	Drum6B EG Time	0~127	3A
06	3B	Drum6B Pan	0~127	3B
06	3C	Drum6B Amp EG	0~1	3C
06	3D	Drum6B Roll	0~1	3D
06	3E	Drum6B Effect Send	0~1	3E
06	3F	Drum6B Motion Seq Type	0~2 : Off/Smooth/TrigHold	--
06	40	Synth1 Glide	0~127	40
06	41	Synth1 Level	0~127	41
06	42	Synth1 EG Time	0~127	42
06	43	Synth1 Pan	0~127	43
06	44	Synth1 Amp EG	0~1	44
06	45	Synth1 Roll	0~1	45
06	46	Synth1 Effect Send	0~1	46
06	47	Synth1 Motion Seq Type	0~2 : Off/Smooth/TrigHold	--
06	48	Synth1 CutOff	0~127	48
06	49	Synth1 Resonance	0~127	49
06	4A	Synth1 EG Int	0~127	4A
06	4B	Synth1 Drive	0~127	4B
06	50	Synth2 Glide	0~127	50
06	51	Synth2 Level	0~127	51
06	52	Synth2 EG Time	0~127	52
06	53	Synth2 Pan	0~127	53

## KORG EM-1 MIDI IMPLEMENTATION

06	54	Synth2 Amp EG	0~1	54
06	55	Synth2 Roll	0~1	55
06	56	Synth2 Effect Send	0~1	56
06	57	Synth2 Motion Seq Type	0~2 : Off/Smooth/TrigHold	--
06	58	Synth2 CutOff	0~127	58
06	59	Synth2 Resonance	0~127	59
06	5A	Synth2 EG Int	0~127	5A
06	5B	Synth2 Drive	0~127	5B
06	5E	Drum Accent Motion Seq SW	0/2 : Off/TrigHold	5E
06	5F	Synth Accent Motion Seq SW	0/2 : Off/TrigHold	5F
06	60	Delay Depth	0~127	60
06	61	Delay Time	0~127	61
06	62	Effect Type	0~10	62
06	63	Effect Param 1	0~127	63
06	64	Effect Param 2	0~127	64
06	65	Delay Motion Seq SW	0~1	65
06	66	Effect Motion Seq SW	0~1	66
06	67	Drum Accent Level	0~127	67
06	68	Synth Accent Level	0~127	68
		Tempo MSB	(song event only)	--
		Tempo LSB	(song event only)	--
06	6B	Mute 1	Bit6 : 0/1=Mute/Solo Bit5~0(P5B~P1)=1 : Mute	6B
06	6C	Mute 2	Bit6 : 0/1=Mute/Solo Bit3~0(S2,S1,P6B,P6A)=1 : Mute	6C

TABLE2 : PATTERN PARAMETERS (1764 bytes)

0	Tempo (MSB)	20.0~300.0	iiiiiiiiii	20~300
1	Tempo (LSB)	iiiiiiiiii00ffff	ffff	0~9
b1,0	Pattern Length	0~3 : 1~4		
2 b5,4	Scale/Beat	0~3 : 16th,32nd,tri,tr2		
b7,6	Roll Type	0~2 : 2~4		
3	Swing	0~25 : 50~75%		
4	Effect Type	0~10	[TABLE18]	
5	Effect Edit 1	0~127		
6	Effect Edit 2	0~127		
7	Delay Depth	0~127		
8	Delay Time	0~127		
b0	Effect MotionSEQ Stat	0~1 : off/on		
9 b1	Delay MotionSEQ Stat	0~1 : off/on		
b0~6	Drum Accent Level	0~127		
10 b7	Drum Accent Motion SEQ Stat	0~1 : off/on		
b0~6	Synth Accent Level	0~127		
11 b7	Synth Accent Motion SEQ Stat	0~1 : off/on		
12~75	Fx Edit 1 MotionSEQ Data	(64bytes) 0~127 (MSB="1" : Off)		
76~139	Fx Edit 2 MotionSEQ Data	(64bytes) 0~127 (MSB="1" : Off)		
140~203	Delay Depth MotionSEQ Data	(64bytes) 0~127 (MSB="1" : Off)		
204~267	Delay Time MotionSEQ Data	(64bytes) 0~127 (MSB="1" : Off)		
Part Parameters				
268~275	Part d1 Parameters	(8bytes)	[TABLE3]	
276~282	Part d1 StepSequence Data	(8bytes)	[TABLE5]	



284~365	Part d1 MotionSequence Data	(82bytes)	[TABLE7]
366~373	Part d2 Parameters	(8bytes)	[TABLE3]
374~381	Part d2 StepSequence Data	(8bytes)	[TABLE5]
382~463	Part d2 MotionSequence Data	(82bytes)	[TABLE7]
464~471	Part d3 Parameters	(8bytes)	[TABLE3]
472~479	Part d3 StepSequence Data	(8bytes)	[TABLE5]
480~561	Part d3 MotionSequence Data	(82bytes)	[TABLE7]
562~569	Part d4 Parameters	(8bytes)	[TABLE3]
570~577	Part d4 StepSequence Data	(8bytes)	[TABLE5]
578~659	Part d4 MotionSequence Data	(82bytes)	[TABLE7]
660~667	Part d5A Parameters	(8bytes)	[TABLE3]
668~675	Part d5A StepSequence Data	(8bytes)	[TABLE5]
676~757	Part d5A MotionSequence Data	(82bytes)	[TABLE7]
758~765	Part d5B Parameters	(8bytes)	[TABLE3]
766~773	Part d5B StepSequence Data	(8bytes)	[TABLE5]
774~855	Part d5B MotionSequence Data	(82bytes)	[TABLE7]
856~863	Part d6A Parameters	(8bytes)	[TABLE3]
864~871	Part d6A StepSequence Data	(8bytes)	[TABLE5]
872~953	Part d6A MotionSequence Data	(82bytes)	[TABLE7]
954~961	Part d6B Parameters	(8bytes)	[TABLE3]
962~969	Part d6B StepSequence Data	(8bytes)	[TABLE5]
970~1051	Part d6B MotionSequence Data	(82bytes)	[TABLE7]
1052~1061	Part s1 Parameters	(10bytes)	[TABLE4]
1062~1189	Part s1 StepSequence Data	(128bytes)	[TABLE6]
1190~1335	Part s1 MotionSequence Data	(146bytes)	[TABLE8]
1336~1345	Part s2 Parameters	(10bytes)	[TABLE4]
1346~1473	Part s2 StepSequence Data	(128bytes)	[TABLE6]
1474~1619	Part s2 MotionSequence Data	(146bytes)	[TABLE8]
1620~1627	Drum Accent StepSequence	(8bytes)	[TABLE5]
1628~1691	Drum Accent MotionSequence Data	(64bytes)	[TABLE9]
1692~1699	Synth Accent StepSequence	(8bytes)	[TABLE5]
1700~1763	Synth Accent MotionSequence Data	(64bytes)	[TABLE9]

TABLE3 : DRUM PART PARAMMETERS (8 bytes)

0	EG Time	0~127
1	Level	0~127
2	Panpot	0~127(64=center)
3	Pitch	0~127(64=equal pitch)

b7	Sample Use	0/1 : use/off
(b4-b6)	(Reserved)	
b2	AMP EG	0/1 : off/on
4 b1	Roll	0/1 : off/on
b0	Effect	0/1 : off/on
5	(Dummy)	
6	Wave No MSB	0~199
7	Wave No LSB	

TABLE4 : SYNTH PART PARARMETERS (10 bytes)

0	EG Time	0~127
1	Level	0~127
2	Panpot	0~127(64=center)
3	Portament	0~127
b7	Sample Use	0/1 : use/off
(b4-b6)	(Reserved)	
b2	AMP EG	0/1 : off/on
4 b1	Roll	0/1 : off/on
b0	Effect	0/1 : off/on
5	Wave No	0~99
6	Cutoff	0~127
7	Resonance	0~127
8	EG Intensity	0~127
9	Drive	0~127

TABLE5 : DRUM PART STEP SEQUENCE DATA/ACCENT STEP DATA (8 bytes)

offset	bit position	value (on Accent Part)
0	Bit0~7 (Step1 ~8)	0/1 =Off(Soft)/On(Hard)
1	Bit0~7 (Step9 ~16)	0/1 =Off(Soft)/On(Hard)
2	Bit0~7 (Step17 ~24)	0/1 =Off(Soft)/On(Hard)
3	Bit0~7 (Step25 ~32)	0/1 =Off(Soft)/On(Hard)
4	Bit0~7 (Step33 ~40)	0/1 =Off(Soft)/On(Hard)
5	Bit0~7 (Step41 ~48)	0/1 =Off(Soft)/On(Hard)
6	Bit0~7 (Step49 ~56)	0/1 =Off(Soft)/On(Hard)
7	Bit0~7 (Step57 ~64)	0/1 =Off(Soft)/On(Hard)

TABLE6 : SYNTH PART STEP SEQUENCE DATA (128 bytes)

0	Note Number (Step1)	0~127 (MSB="1" : Off)
:	:	
63	Note Number (Step64)	

64	Gate Time (Step1)	0~255 : 0.25~64.0 (Scale/Beat=0,1)
:	:	0~191 : 0.25~48.0 (Scale/Beat=2)
127	Gate Time (Step64)	

TABLE7 : DRUM PART MOTION SEQUENCE DATA (82bytes)

0	Type	0~2 : Off/Smooth/TrigHold
1	b0,1   Knob Destination	0~3 : Pitch/Level/EG Time/Pan
	b2,3   SW Destination	0~2 : Amp EG/Roll/Effect
2	Knob value (step1)	0~127 (MSB="1" : Off)
:	:	
65	Knob value (step64)	
66~81	SW value (step64)	[TABLE10]

TABLE8 : SYNTH PART MOTION SEQUENCE DATA (146bytes)

0	Type	0~2 : Off/Smooth/TrigHold
1	b0,1   Knob Destination	0~3 : Pitch/Level/EG Time/Pan
	b2,3   SW Destination	0~2 : Amp EG/Roll/Effect
	b4,5   Filter Destination	0~3 : CutOff/Reso./EGint/drive
2	Knob value (step1)	0~127 (MSB="1" : Off)
:	:	
65	Knob value (step64)	
66~81	SW value (step64)	[TABLE10]
82	Filter Knob value (step1)	0~127 (MSB="1" : Off)
:	:	
145	Filter Knob value (step64)	

TABLE9: ACCENT PART MOTION SEQUENCE DATA (64 bytes)

0	Accent Level value (step1)	0~127 (MSB="1" : Off)
:	:	
63	Accent Level value (step64)	

TABLE10 : MOTION SEQUENCE DATA(SWITCH TYPE) (16 bytes)

offset	bit position	type	value
0	Bit0~7 (Step1~8)	Motion SW	0/1 =Off/On
1	Bit0~7 (Step9~16)	Motion SW	0/1 =Off/On
2	Bit0~7 (Step17~24)	Motion SW	0/1 =Off/On
3	Bit0~7 (Step25~32)	Motion SW	0/1 =Off/On
4	Bit0~7 (Step33~40)	Motion SW	0/1 =Off/On
5	Bit0~7 (Step41~48)	Motion SW	0/1 =Off/On
6	Bit0~7 (Step49~56)	Motion SW	0/1 =Off/On
7	Bit0~7 (Step57~64)	Motion SW	0/1 =Off/On
8	Bit0~7 (Step1~8)	Motion Value	0/1 =Off/On
9	Bit0~7 (Step9~16)	Motion Value	0/1 =Off/On

10	Bit0~7 (Step17~24)	Motion Value	0/1 =Off/On
11	Bit0~7 (Step25~32)	Motion Value	0/1 =Off/On
12	Bit0~7 (Step33~40)	Motion Value	0/1 =Off/On
13	Bit0~7 (Step41~48)	Motion Value	0/1 =Off/On
14	Bit0~7 (Step49~56)	Motion Value	0/1 =Off/On
15	Bit0~7 (Step57~64)	Motion Value	0/1 =Off/On

TABLE11 : CURRENT SONG PARAMETER

0~517	Song Parameters	(518bytes)	[TABLE13]
Song Event Data			
518~521	event data (1st)	[TABLE14] or [TABLE15] or [TABLE16]	
522~525	event data (2nd)		
:			
143314 ~143317 (max)	event data (35700th(max))		

TABLE12 : ALL SONG DATA

0~ 517	Song 1 parameter	(518bytes)	[TABLE13]
518~1035	Song 2 parameter	(518bytes)	[TABLE13]
1036~1553	Song 3 parameter	(518bytes)	[TABLE13]
1554~2071	Song 4 parameter	(518bytes)	[TABLE13]
2072~2589	Song 5 parameter	(518bytes)	[TABLE13]
2590~3107	Song 6 parameter	(518bytes)	[TABLE13]
3108~3625	Song 7 parameter	(518bytes)	[TABLE13]
3626~4143	Song 8 parameter	(518bytes)	[TABLE13]
4144~4661	Song 9 parameter	(518bytes)	[TABLE13]
4662~5179	Song 10 parameter	(518bytes)	[TABLE13]
5180~5697	Song 11 parameter	(518bytes)	[TABLE13]
5698~6215	Song 12 parameter	(518bytes)	[TABLE13]
6216~6733	Song 13 parameter	(518bytes)	[TABLE13]
6734~7251	Song 14 parameter	(518bytes)	[TABLE13]
7252~7769	Song 15 parameter	(518bytes)	[TABLE13]
7770~8287	Song 16 parameter	(518bytes)	[TABLE13]
Song Event Data (Event Size is total number of event of All Songs.)			
8288~8291	event data (1st)	[TABLE14] or [TABLE15] or [TABLE16]	
8292~8295	event data (2nd)		
:			
151084 ~151087 (max)	event data (35700th(max))		

TABLE13 : SONG PARAMETERS (518 bytes)

0	Tempo (MSB)	20.0~300.0	iiiiiiiiii 20~300
1	Tempo (LSB)	iiiiiiiiii00ffff	ffff .0~.9
2	step end data	0~255=1stPosition~256thPosition	
3	tempo lock	0/1 =Off/On	
4	number of event (MSB)	0~35700	
5	number of event (LSB)		
Position Data			
6	Pattern Number (1st)	0~127 = A01 ~ B64	
:	:		
261	Pattern Number (256th)		
262	Note Offset (1st)	-24~24	
:	:		
517	Note Offset (256th)		

TABLE14 : SONG EVENT DATA (Controll Type) (4bytes)

0	Position Number	0~255	
b7	Enable Data	0/1 : Enable/Disable	
1	b5,4 Measure Number	0~3 : 1~4	
b3~0	Step Number	0~15 : 1~16	
b6	if "Destination" is TempoMSB		
	Tempo value (b15)		
2	b7 Control/Note	0 : Control	
b6~0	Destination (ds)		[TABLE1]
3	if "Destination" is TempoMSB		
	Tempo Value (b14~7)		
	if "Destination" is TempoLSB		
	Tempo Value (b6~0)		b7->0
	if "Destination" is not Tempo		
	Value		0~127

TABLE15 : SONG EVENT DATA (Drum Note Type) (4 bytes)

0	Position Number	0~255	
b7	Enable Data	0: Enable	
b6	not use		
1	b5,4 Measure Number	0~3 : 1~4	
b3~0	Step Number	0~15 : 1~16	
2	b7 Note	1 : Note	
b6~3	not used		
b2~0	Drum Part Number	0~7	*1
3	Drum Note Event ID	255(fixed)	

\*1 0~3 : Drum1~Drum4  
4 : Drum5A  
5 : Drum5B

6 : Drum6A  
7 : Drum6B

TABLE16 : SONG EVENT DATA (Synth Note Type) (4 bytes)

0	Position Number	0~255
b7	Enable Data	0/1 : Enable/Disable
1	b5,4   Measure Number	0~3 : 1~4
b3~0	Step Number	0~15 : 1~16
b6	if "Tie to Next Meas" is not TieTo	
	length (tick count LSB)	*2
	if "Tie to Next Meas" is TieTo	
	not use	
2	b7   Note	1 : Note
b6~0	Note Number	0~127
3	b7   Synth Part Select	0/1 : Synth1/Synth2
b6	Tie to next Meas flag	1 = TieTo (tie to next measure)
	if "Tie to Next Meas" is TieTo	
b5~0	not used	
	if "Tie to Next Meas" is not TieTo	
b5~2	length (step count)	0~15
b1~0	length (tick count 2MSB)	0~7(with tick count LSB *2)

TABLE17 : GLOBAL PARAMETERS (128 bytes)

0,1,2	dummy	
3	Metronome	0~4 : Off/r-0/r-1/r-2/On
4	dummy	0/1 : off/on
5	Part 1 Note Number	0~127 : C-1~G9
6	Part 2 Note Number	0~127 : C-1~G9
7	Part 3 Note Number	0~127 : C-1~G9
8	Part 4 Note Number	0~127 : C-1~G9
9	Part 5A Note Number	0~127 : C-1~G9
10	Part 5B Note Number	0~127 : C-1~G9
11	Part 6A Note Number	0~127 : C-1~G9
12	Part 6B Note Number	0~127 : C-1~G9
13	Clock	0/1 : Int/Ext
14	dummy	
15	Pitch Bend Range	0~12~24 : -12~0~12
16~63	dummy	
64~127	Pattern Set Parameters	0~255 : A01~D64

used as Global MIDI ch, also System Exclusive. ALL note off,

TABLE 18:EFFECT TYPE

0:Reverb
1:Flanger/Chorus
2:Phaser
3:Ring Modulation
4:Pitch Shifter
5:Compressor
6:Distortion
7:Decimator
8:Resonator
9:Filter
10:Modulation Delay